

II. Amendments to the Claims

Please cancel claims 7-16 without prejudice.

1. (Twice Amended) A wheel rim formed of fiber reinforced plastic comprising[.] ;
the wheel has a structural portion and left and right braking surfaces;
said structural portion is predominantly a high modulus first fibers in a plastic matrix;
said braking surfaces are formed of [strong] second reinforcing fibers, said second fibers having hardness properties that make said second fibers more easily machinable fibers than said first fibers, said second reinforcing fibers [also] being integrally molded with said first reinforcing fibers in a monolithic plastic matrix;
said high modulus first fibers are aligned in laminations formed of a series of 0 - 45 - 90 degree alignments;
the wheel is formed in a shape of complex curvature having substantially uniform strength and having a substantially uniform density ;
the ratio of said first and second fibers to said plastic matrix in said wheel is substantially above 60%;
said wheel has first and second substantially identical semicircular halves;
said first half is formed so as to be integrally molded with [has] a first male plug at one end and a first female receptacle integrally molded at the opposite end separated by an arc portion;
said first male plug has a first tapered neck portion;

said second half is formed so as to be integrally molded with [has] a second male plug at one end and a second female receptacle integrally molded at the opposite end separated by a second arc portion;

said second male plug has a second tapered neck portion;

the wheel is matingly interconnecting and adhesively bonded, so that said first male plug bonds with said second female receptacle, and said second male plug bonds with said first female receptacle such that said first tapered neck portion substantially centers said first male plug thereby preserving adequate adhesive coating, and said second tapered neck portion substantially centers said second male plug thereby preserving adequate adhesive coating.

2. (Twice Amended) The wheel of claim 1, further comprising:

the wheel is formed with a tire well that extends between left and right apexes;

said apexes are [slightly] radiused;

said well is smoothly curved to receive a tire with a diameter of around one inch;

extending downwardly from said apexes are left and right braking surfaces;

said braking surfaces join left and right walls;

said left and right walls join at a spoke bed;

the curvature of said spoke bed and left and right walls substantially conforms in shape to the shape of the trailing two thirds of an aerodynamic foil having a thickness of about 20 mm and a chord of about 40 mm;

said braking surfaces are substantially flat and [slightly] less than 20 mm across.

3. (Previously Presented) The wheel of claim 2, further comprising:

said tire well is formed of a first outer tire well lamination and a first inner tire well lamination, which first inner and outer tire well laminations overlap said apexes and extend under said braking surfaces.

4. (Previously Presented) The wheel of claim 3, further comprising:

said spoke bed and walls are formed of an overlapped second inner spoke bed lamination, a second outer spoke bed lamination and a first middle lamination;

said second inner and outer spoke bed lamination and said first middle lamination effectively form an all carbon fiber reinforced plastic sandwich with voids therebetween substantially eliminated by the compaction process;

said second inner and outer spoke bed laminations and said first middle laminations form quasi-isotropic walls because of the directions of first fiber orientation.

5. (Original) The wheel of claim 4, further comprising:

three 0 degree bundles of fibers are arranged aligned with the arc of the wheel at said spoke bed said left apex and said right apex.

6. (Original) The wheel of claim 3, further comprising:
said braking surfaces are machined to a high level of smoothness and trueness;
said braking surfaces are formed of a plastic matrix with fibers formed of materials that
have greater toughness than carbon fiber;
said machined braking surfaces have a greater coefficient of friction with elastomeric
caliper brake shoes than carbon fiber reinforced plastic surfaces.

7. (Canceled)

8. (Canceled)

9. (Canceled)

10. (Canceled)

11. (Canceled)

12. (Canceled)

13. (Canceled)

14. (Canceled)

15. (Canceled)

16. (Canceled)

17. (Previously Presented) A fiber reinforced plastic wheel rim comprising:

the wheel has a structural portion being predominantly high modulus fiber in a plastic matrix;

said rim having first and second walls and a tire well joining said walls at first and second apexes, said walls intersecting at a spoke bed opposite said tire well;

said rim having an inner lamination and an outer lamination, said laminations each comprising a plurality of unidirectional layers oriented so the fibers cross one another at angles of substantially 0°, 45° and 90°;

unidirectional fiber bundles reinforcing said rim at said apexes and spoke bed, said bundles sandwiched between said laminations.

18. (Previously Presented) A wheel rim formed of fiber reinforced plastic comprising;

the wheel has a structural portion and left and right braking surfaces;

said structural portion is predominantly a high modulus first fiber in a plastic matrix;

said high modulus first fibers are aligned in laminations formed of a series of 0 - 45 - 90 degree alignments;

the wheel is formed in a shape of complex curvature having substantially uniform strength and having a substantially uniform density;

the ratio of said first fibers to said plastic in said wheel is substantially above 60%;

said wheel is formed of first and second substantially identical semicircular halves;

the first and second halves are matingly interconnected and adhesively bonded to form said wheel.

19. (Currently Amended) The wheel of claim 18, further comprising:

the wheel is formed with a tire well that extends between left and right apexes;

said apexes are [slightly] radiused;

said well is smoothly curved to receive a tire with a diameter of around one inch;

extending downwardly from said apexes are left and right braking surfaces;

said braking surfaces join left and right walls;

said left and right walls join at a spoke bed;

the curvature of said spoke bed and left and right walls substantially conforms in shape to the shape of the trailing two thirds of an aerodynamic foil having a thickness of about 20 mm and a chord of about 40 mm;

said braking surfaces are substantially flat and [slightly] less than 20 mm across.

20. (Previously Presented) The wheel of claim 19, further comprising:

said tire well is formed of a first outer tire well lamination and a first inner tire well lamination, which first inner and outer tire well laminations overlap said apexes and extend under said braking surfaces.

21. (Previously Presented) The wheel of claim 20, further comprising:

said spoke bed and walls are formed of an overlapped second inner spoke bed lamination, a second outer spoke bed lamination and a first middle lamination;

said second inner and outer spoke bed lamination and said first middle lamination effectively form an all carbon fiber reinforced plastic sandwich with voids therebetween eliminated by the compaction process;

said second inner and outer spoke bed laminations and said first middle laminations form quasi-isotropic walls because of the directions of first fiber orientation.